

IN THE CLAIMS

Please amend the claims as noted.

1. (Currently amended) An improved battery cell comprising:

a cell casing in sealed communication with
a cell cap and an interior cavity;

means for insulation of said cell casing from direct contact
with said cell cap;

a first current collector formed of metallic foil and having
a first planar surface and a second planar surface;

said first planar surface in contact with said cell cap;

a first electrode adhered to said second planar surface,

said first electrode and said first current collector

thereby forming a unitary structure;

a porous second current collector having an upper planar
surface and a lower planar surface;

said second current collector formed of non-metallic

material from a group of materials consisting of

article-dispersed plastic tape and plastic dispersed
carbon tape;

said lower planar surface in contact with said cell casing;

a second electrode adhered to said upper planar surface,

said second current collector and said second electrode

thereby forming a second unitary structure; and

a separator in contact with said upper planar surface and

said second planar surface, said separator sufficiently porous to allow passage of electrolyte therethrough in said interior cavity.

2.(Original) The improved battery cell as defined in claim 1 additionally comprising at least one of said first electrode and said second electrode being rendered fire retardant by addition of fire retardant material to actives forming said electrodes.

3. (Original) The improved battery cell as defined in claim one additionally comprising:

means to bias the first current collector against the cell cap and concurrently bias the second current collector against the cell casing.

4.(Original) The improved battery cell as defined in claim 3 wherein said means to bias the first current collector against the cell cap and concurrently bias the second current collector against the cell casing is provided by said material comprising said first current collector and said second current collector being compressed when said cell casing is in said sealed communication with said cell cap and thereafter being in biased communication with said first current collector and said second current collector.

5. (Currently Amended) An improved battery cell comprising:

a cell casing in sealed communication with
a cell cap and having an interior cavity;

means for insulation of said cell casing from direct contact
with said cell cap;

a first current collector in said interior cavity having a
first planar surface and a second planar surface;

said first planar surface in contact with said cell cap;

a first electrode adhered to said second planar surface,
said first electrode and said first current collector
thereby forming a unitary structure;

a porous second current collector in said interior cavity
having an upper planar surface and a lower planar
surface;

said lower planar surface in contact with said cell casing;

a second electrode adhered to said upper planar surface,
said second current collector and said second electrode
thereby forming a second unitary structure;

said first current collector and said second current
collector, both formed from one or a combination
of materials from a group of materials consisting of
particle-dispersed plastic tape, plastic dispersed
carbon tape, fiber dispersed conductive plastic and
carbon tape, particle and metallic powder dispersed
conductive plastic; and

a separator in contact with said upper planar surface and

said second planar surface.

6. (Original) The improved battery cell as defined in claim 5 additionally comprising at least one of said first current collector and said second current collector being rendered fire retardant by addition of collector fire retardant material thereto.

7. (Original) The improved battery cell as defined in claim 5 wherein said collector fire retardant material is comprised of one or a combination of a group of collector fire retardant materials consisting of aluminum trihydrate, magnesium hydroxide, decabromodiphenyl tetradecabromodiphenoxy benzene, lithium carbonate, ethylene bistetrabromophthalimide, $C_{12}OBr_{10}$, and $C_{18}O_2Br_4$.

8. (Original) The improved battery cell as defined in claim 5 wherein said collector fire retardant material is comprised of one or a combination of a group of collector fire retardant materials consisting of Li_2CO_3 , Na_2CO_3 , and $CaCO_3$.

9. (Original) The improved battery cell as defined in claim 5 additionally comprising said first electrode and said second electrode being rendered fire retardant by addition of active fire retardant material to the active material forming one or both of said first and said second electrode.

10. (Original) The improved battery cell as defined in claim 9

wherein said active fire retardant material is comprised of one or a combination of active fire retardant materials from a group of active fire retardant materials consisting of aluminum trihydrate, magnesium hydroxide, decabromodiphenyl tetradecabromodiphenoxy benzene, lithium carbonate, ethylene bistetrabromophthalimide, Li_2CO_3 , Na_2CO_3 , and CaCO_3 .

11. (Original) The improved battery cell as defined in claim 6 additionally comprising said first electrode and said second electrode being rendered fire retardant by addition of active fire retardant material to the active material forming one or both said first and said second electrode.

12. (Original) The improved battery cell as defined in claim 11 wherein said active fire retardant material is comprised of one or a combination of active fire retardant materials from a group of active fire retardant materials consisting of aluminum trihydrate, magnesium hydroxide, decabromodiphenyl tetradecabromodiphenoxy benzene, lithium carbonate, ethylene bistetrabromophthalimide, Li_2CO_3 , Na_2CO_3 , and CaCO_3 .

13.(Original) The improved battery cell as defined in claim 5 additional comprising:

means to bias the first current collector against the cell cap and concurrently bias the second current collector against the cell casing.

14.(Original) The improved battery cell as defined in claim 13 wherein said means to bias the first current collector against cell cap and concurrently bias said second current collector against said cell casing is provided by said material forming said first current collector and said material forming said second current collector being compressed when said cell casing is in said sealed communication with said cell cap and thereafter being in biased communication with said first current collector and said second current collector.

15.(currently amended) An improved battery cell comprising:

a cell can having a cell casing in sealed communication with

a cell cap and having an interior cavity;

means for insulation of said cell casing from direct contact

with said cell cap;

a first current collector in said interior cavity having a first planar surface and a second planar surface;

said first planar surface in contact with said cell cap;

a porous second current collector in said interior cavity

having an upper planar surface and a lower planar surface;
said lower planar surface in contact with said cell
casing;
said first current collector and said second current
collector, both formed from one or a combination of
collector materials from a group of collector materials
consisting of particle-dispersed plastic tape and
plastic dispersed carbon tape;
actives added to said materials forming said first current
collector and said second current collector whereby
said first current collector is also a first electrode
and said second current collector is also a second
electrode; and
a separator in contact with said upper planar surface and said
second planar surface, said separator sufficiently porous to
allow passage of electrolyte in said interior cavity.

16.(Original) The improved battery cell as defined in claim 9
additionally comprising at least one of said first electrode and
said second electrode being rendered fire retardant by addition of
active fire retardant material to said active material added to
said materials forming said first and said second current
collectors.

17. (Original) The improved battery cell as defined in claim 16 wherein said active fire retardant material is comprised of one or a combination of active fire retardant materials from a group of active fire retardant materials consisting of aluminum trihydrate, magnesium hydroxide, decabromodiphenyl tetradecabromodiphenoxy benzene, lithium carbonate, ethylene bistetrabromophthalimide, Li_2CO_3 , Na_2CO_3 , and CaCO_3 .

18. (Original) The improved battery cell as defined in claim 16 additionally comprising:

means to bias the first current collector against the cell cap and concurrently bias the second current collector against the cell casing.

19. (Original) The improved battery cell as defined in claim 18 wherein said means to bias the first current collector against cell cap and concurrently bias said second current collector against said cell casing is provided by said material forming said first current collector and said material forming said second current collector being compressed when said cell casing is in said sealed communication with said cell cap and thereafter being in biased communication with said first current collector and said second current collector.

20. (Original) The improved battery cell as defined in claim 1 wherein said first electrode and said second electrode are formed of one or a combination of active materials from a group of active materials consisting of Li, Co, O, Ni, Mn, C, S, and Lithium metal.

21. (Original) The improved battery cell as defined in claim 5 wherein said first electrode and said second electrode are formed of one or a combination of active materials from a group of active materials consisting of Li, Co, O, Ni, Mn, C, S, and Lithium metal.

22. (Original) The improved battery cell as defined in claim 15 wherein said first electrode and said second electrode are formed of one or a combination of active materials from a group of active materials consisting of Li, Co, O, Ni, Mn, C, S, and Lithium metal.

23. (Original) The improved battery cell as defined in claim 1 wherein said cell is cylindrical in shape.

24. (Original) The improved battery cell as defined in claim 2 wherein said second current collector is formed of metallic material.

25. (Withdrawn) The improved battery cell as defined in claim 1 wherein said cell is prismatic having a plurality of positive and negative electrodes formed therein.

26. (Original) The improved battery cell as defined in claim 1 further comprising:

said battery cell charged upon manufacture to a maximum charge between 0 to 10% of the capacity of said battery cell whereby said battery cell may be shipped or stored without suffering corrosion or degradation.

27. (Original) The improved battery cell as defined in claim 5 further comprising:

said battery cell charged upon manufacture to a maximum charge between 0 to 10% of the capacity of said battery cell whereby said battery cell may be shipped or stored without suffering corrosion or degradation.

28. (Original) The improved battery cell as defined in claim 11 further comprising:

said battery cell charged upon manufacture to a maximum charge between 0 to 10% of the capacity of said battery cell whereby said battery cell may be shipped or stored without suffering corrosion or degradation.

29. (Currently Amended) An electrode apparatus for use in constructing a lithium ion battery cell comprising:

a first current collector formed of metallic foil and having
a first planar surface and a second planar surface;
said first planar surface in contact with a first conductor
for communicating electrical current to and away
therefrom;

a first electrode adhered to said second planar surface,
said first electrode and said first current collector
thereby forming a unitary structure;

a porous second current collector having an upper planar
surface and a lower planar surface;

said second current collector formed of non-metallic
material from a group of materials consisting of
particle-dispersed plastic tape and plastic dispersed
carbon tape;

said lower planar surface in contact a second conductor to
communicate electrical current to and away therefrom;

a second electrode adhered to said upper planar surface,
said second current collector and said second electrode
thereby forming a second unitary structure; and

a separator in contact with said upper planar surface and
said second planar surface, said separator sufficiently
porous to allow passage of electrolyte therethrough.

30. (Currently Amended) An electrode apparatus for use in constructing a lithium ion battery cell comprising:

a first current collector having a first planar surface and a second planar surface;

said first planar surface communicating with a first battery terminal exterior to said battery cell;

a first electrode adhered to said second planar surface, said first electrode and said first current collector thereby forming a unitary structure;

a second current collector in said interior cavity having an upper planar surface and a lower planar surface;

said lower planar surface communicating with a second battery terminal exterior to said battery cell;

a second electrode adhered to said upper planar surface, said second current collector and said second electrode thereby forming a second unitary structure;

said first current collector and said second current collector, both being porous and formed from one or a combination of materials from a group of materials consisting of particle-dispersed plastic tape, plastic dispersed carbon tape, fiber dispersed conductive plastic and carbon tape, particle and metallic powder dispersed conductive plastic; and

a separator in contact with said upper planar surface and said second planar surface, said separator sufficiently porous to allow passage of electrolyte therethrough.

31. (Currently Amended) An electrode apparatus for use in constructing a lithium ion battery cell a cell having a cell casing in sealed insulated communication with a cell cap said sealed communication defining an interior cavity comprising:

a first current collector in said interior cavity having a first planar surface and a second planar surface;
said first planar surface in contact with said cell cap;
a second current collector in said interior cavity having an upper planar surface and a lower planar surface;
said lower planar surface in contact with said cell casing;
said first current collector and said second current collector, both being porous and formed from one or a combination of collector materials from a group of collector materials consisting of particle-dispersed plastic tape and plastic dispersed carbon tape;
actives added to said materials forming said first current collector and said second current collector whereby
said first current collector is also a first electrode
and said second current collector is also a second electrode; and
a separator in contact with said upper planar surface and said second planar surface, said separator sufficiently porous to allow passage of electrolyte in said interior cavity.